

Atty.  
Dkt. No.

M#

Client Ref.

#2  
1-3-02

283002

Applicant: FARBER et al.

Appln. No.: Cont. of 09/283,160

Filing Date: November 15, 2001

Examiner: Jean Homere

Group Art Unit: 2177

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date: November 15, 2001

Page

1

of

7

## U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
JRH	AR	5,638,443	06/1997	STEFIK et al.	705	54	11/23/94
	BR	5,802,291	09/1998	BALICK et al.	709	202	3/30/95
	CR	5,542,087	07/1996	NEIMAT et al.	707	10	10/15/93
	DR	5,287,499	02/1994	NEMES	707	2	5/16/91
	ER	4,922,417	05/1990	CHURM et al.	707	1	10/24/86
	FR	5,341,477	08/1994	PITKIN et al.	709	226	8/6/93
	GR	5,907,704	05/1999	GUDMUNDSON et al.			4/3/95
	HR	6,134,603	10/2000	Jones et al.	709	330	
	IR	6,006,018	12/1999	Burnett et al.	395	200.49	
	JR	5,809,494	09/1998	Nguyen	707	1	
	KR	5,640,564	06/1997	Hamilton et al.	709	303	
	LR	5,452,447	09/1995	Nelson et al.	707	205	
V	MR	5,202,982	04/1993	Gramlich et al.	707	2	

## FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name		Abstract		Readily Available	
							Enclosed	No	Enclose	No
	NR	05162529	06/1993	JP	HOROSHI		x			x

## OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

JRH	OR	Gwertzman, James, et al. "The Case for Geographical Push-Caching." Technical Report HU TR 34-94 (excerpt), Harvard University, DAS, Cambridge, MA 02138, 1994, 2 pgs.				
	PR	Grigni, Michelangelo, et al. "Tight Bounds on Minimum Broadcasts Networks." SIAM Journal of Discrete Mathematics, Vol. 4, No. 2, May 1991, pgs. 207-222.				
	QR	Devine, Robert. "Design and Implementation of DDH: A Distributed Dynamic Hashing Algorithm." In Proceedings of 4th International Conference on Foundations of Data Organizations and Algorithms, 1993, pgs. 101-114.				
	RR	Deering, Stephen, et al. "Multicast Routing in Datagram Internetworks and Extended LANs." ACM Transactions on Computer Systems, Vol. 8, No. 2, May 1990, pgs. 85-110.				
	SR	Cormen, Thomas H., et al. <u>Introduction to Algorithms</u> , The MIT Press, Cambridge, Massachusetts, 1994, pgs. 219-243, 991-993.				
V	TR	Naor, Moni, et al. "The Load, Capacity and Availability of Quorum Systems." In Proceedings of the 35th IEEE Symposium on Foundations of Computer Science, November 1994, pgs. 214-225.				

Examiner Jean R Homere

Date Considered: 5-01-03

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)  
To: U.S. Department of Commerce  
(PW FORM PAT-1449)  
Patent and Trademark Office

Atty.  
Dkt. No.

M#

Client Ref.

283002

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

Applicant: FARBER et al.

Appln. No.: Cont. of 09/283,160

Filing Date: November 15, 2001

Date: November 15, 2001

Page

2

of

7

Examiner: Jean Homere

Group Art Unit: 2177

## **U.S. PATENT DOCUMENTS**

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
-------------------------	--------------------	-----------------	---	-------	--------------	------------------------------------

## **FOREIGN PATENT DOCUMENTS**

Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract	Translation Readily Available
Enclosed	No	Enclose	No		

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

JRH	AR	Nisan, Noam. "Pseudorandom Generators for Space-Bounded Computation." In Proceedings of the Twenty-Second Annual ACM Symposium on Theory of Computing, May 1990, pgs. 204-212.			
	BR	Palmer, Mark, et al. "Fido: A Cache that Learns to Fetch." In Proceedings of the 17th International Conference on Very Large Data Bases, September 1991, pgs. 255-264.			
	CR	Peleg, David, et al. "The Availability of Quorum Systems." Information and Computation 123, 1995, 210-223.			
	DR	Rabin, Michael. "Efficient Dispersal of Information for Security, Load Balancing, and Fault Tolerance." Journal of the ACM, Vol. 36, No. 2, April 1989, pgs. 335-348			
	ER	Ravi, R., "Rapid Rumor Ramification: Approximating the Minimum Broadcast Time." In Proceedings of the 35th IEEE Symposium on Foundation of Computer Science, November 1994, pgs. 202-213.			
	FR	Schmidt, Jeanette, et al. "Chernoff-Hoeffding Bounds for Applications with Limited Independence." In Proceedings of the 4th ACS-SIAM Symposium on Discrete Algorithms, 1993, pgs. 331-340.			
	GR	Tarjan, Robert Endre, et al. "Storing a Sparse Table." Communications of the ACM, Vol. 22, No. 11, November 1979, pgs. 606-611.			
	HR	Wegman, Mark, et al. "New Hash Functions and Their Use in Authentication and Set Equality." Journal of Computer and System Sciences Vol. 22, June 1981, pgs. 265-279.			
	IR	Vitter, Jeffrey Scott, et al. "Optimal Prefetching via Data Compression." In Proceedings of 32nd IEEE Symposium on Foundations of Computer Science, November 1991, pgs. 121-130.			
	JR	Fredman, Michael, et al. "Storing a Sparse Table with O(1) Worst Case Access Time." Journal of the Association for Computing Machinery, Vol. 31, No. 3, July 1984, pgs. 538-544.			
	KR	Yao, Andrew Chi-Chih. "Should Tables be Sorted?" Journal of the Association for Computing Machinery, Vol. 28, No. 3, July 1981, pgs. 615-628.			
	LR	Floyd, Sally, et al. "A reliable Multicast Framework for Light-Weight Sessions and Application Level Framing." In Proceeding of ACM SIGCOMM '95, pgs. 342-356.			
	MR	Feeley, Michael, et al. "Implementing Global Memory Management in a Workstation Cluster." In Proceedings of the 15th ACM Symposium on Operating Systems Principles, 1995, pgs. 201-212.			

Examiner

Jean R Homere

Date Considered:

5-01-03

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)  
 To: U.S. Department of Commerce  
 (PW FORM PAT-1449)  
 Patent and Trademark Office

Atty.  
Dkt. No.

M#

Client Ref.

283002

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

Applicant: FARBER et al.

Appln. No.: Cont. of 09/283,160

Filing Date: November 15, 2001

Date: November 15, 2001

Page

3

of

7

Examiner: Jean Homere

Group Art Unit: 2177

## **U.S. PATENT DOCUMENTS**

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
-------------------------	--------------------	-----------------	---	-------	--------------	------------------------------------

## **FOREIGN PATENT DOCUMENTS**

Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract	Translation Readily Available
				Enclosed	No
				Enclose	No

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.):

JRH	AR	Carter, J. Lawrence, et al. "Universal Classes of Hash Functions." Journal of Computer and System Sciences, Vol. 18, No. 2, April 1979, pgs. 143-154.			
	BR	PATENT ABSTRACTS OF JAPAN, "Electronic Mail Multiplexing System and Communication Control Method in The System." 06/30/1993, JP 05162529			
	CR	KIM et al., "Experiences with Tripwire: Using Integrity Checkers For Intrusion Detection", COAST Labs. Dept. of Computer Sciences Purdue University, February 22, 1995, pages 1-12			
JAH	DR	KIM et al., "The Design and Implementation of Tripwire: A file System Integrity Checker", COAST Labs. Dept. of Computer Sciences Purdue University, November 19, 1993, pages 1-21			
	ER				
	FR				
	GR				
	HR				
	IR				
	JR				
	KR				
	LR				
	MR				

Examiner

Jean R Homere

Date Considered: 5-01-03

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Atty.  
Dkt. No.

M#

Client Ref.

283002

**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Applicant: FARBER et al.

Appln. No.: Cont. of 09/283,160

Filing Date: November 15, 2001

Date: November 15, 2001

Page

4

of

7

Examiner: Jean Homere

Group Art Unit: 2177

**U.S. PATENT DOCUMENTS**

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
JRH	AR	4,888,681	12/1989	BARNES			
	BR	4,972,367	11/1990	BURKE			
	CR	5,050,212	09/1991	DYSON			
	DR	<del>5,202,982</del>	<del>04/1993</del>	<del>GRAMLICH</del>			
	ER	5,208,858	05/1993	VOLLERT			
	FR	5,301,316	05/1994	HAMILTON			
	GR	5,343,527	08/1994	MOORE			
	HR	4,571,700	02/1996	EMRY, JR.			
	IR	4,675,810	06/1987	GRUNER			
	JR	5,050,074	09/1991	MARCA			
	KR	5,276,901	01/1994	HOWELL			
	LR	5,384,565	01/1995	CANNON			
	MR	<del>5,202,982</del>	<del>04/1993</del>	<del>GRAMLICH</del>			
	NR	5,357,623	10/1994	MEGORY-COHEN			

**FOREIGN PATENT DOCUMENTS**

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	English Abstract	Translation Readily Available
								Enclosed	No
	OR								
	PR								
	QR								
	RR								
	SR								
	TR								
	UR								

**OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

JRH	VR	Bert dem Boer et al., Collisions for the compression function of MD <sub>s</sub> , pp. 292-304										
	WR	Sakti Pramanik et al., Multi-Directory Hasing, 1993, Info. Sys., Vol. 18, No. 1, pp. 63-74										
	XR	Murlidhar Koushik, Dynamic Hashing with Distributed Overflow Space: A File Organization with Good Insertion Performance, 1993, Info. Sys., Vol. 18, No. 5, pp. 299-317										
	YR	Witold Litwin et al., LH*-Linear Hashing for Distributed Files, HP Labs Tech. Report No. HPL-93-21, June 1993, pp. 1-22										
	ZR	Yuliang Zheng et al., HAVAL - A One-Way Hashing Algorithm with Variable Length of Output (Extended Abstract), pp. 83-105										
	AAR	Chris Charnes and Josef Pieprzky, Linear Nonequivalence versus Nonlinearity, Pieprzky, pp. 156-164										

Examiner Jean R Homere

Date Considered: 5-01-03

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Atty.  
Dkt. No.

M#

Client Ref.

283002

**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Applicant: FARBER et al.

Appln. No.: Cont. of 09/283,160

Filing Date: November 15, 2001

Date: November 15, 2001

Page

5

of

7

Examiner: Jean Homere

Group Art Unit: 2177

**U.S. PATENT DOCUMENTS**

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
JRH	AR	3,668,647	06/1992	EVANGELISTI			
	BR	4,215,402	07/1980	MITCHELL			
	CR	4,290,105	09/1981	CICHELLI			
	DR	4,376,299	03/1983	RIVEST			
	ER	4,405,829	09/1983	RIVEST			
	FR	4,412,285	10/1983	NECHES			
	GR	4,414,624	11/1983	SUMMER, JR.			
	HR	4,441,155	04/1984	FLETCHER			
	IR	4,464,713	08/1984	BENHASE			
	JR	5,772,933	03/1986	MATICK			
	KR	4,642,793	02/1987	MEADEN			
	LR	4,691,2999	09/1987	RIVEST			
	MR	4,725,945	02/1988	KRONSTADT			
	NR	4,773,039	09/1988	ZAMORA			

**FOREIGN PATENT DOCUMENTS**

ORIGINAL PAPER DOCUMENT											
		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	Abstract		Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
	RR										
	SR										
	TR										
	UR										

**OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

JRH	VR	Witold Litwin et al., Linear Hashing for Distributed Files, ACM SIGMOD, May 1993, pp. 327-336				
	WR	Ming-Ling Lo et al., On Optimal Processor Allocation to Support Pipelined Hash Joins, ACM SIGMOD, pp. 69-78, May 1993				
	XR	Thomas A. Berson, Differential Cryptanalysis Mod $2^{32}$ with Applications to MD5, pp. 69-81				
	YR	William Perrizo et al., Distributed Join Processing Performance Evaluation, Twenty-Seventh Hawaii International Conference on System Sciences, Vol. II, pp. 236-244				
	ZR	Vijay Kumar, A Concurrency Control Mechanism Based on Extendible Hashing for Main Memory Database Systems, ACM, Vol. 3, 1989, pp. 109-113				
	AAR	Birgit Pfizman, Sorting Out Signature Schemes, November 1993, 1 <sup>st</sup> Conf. Computer & Comm. Security '93, p. 74-85				

Examiner

Jean R Homere

Date Considered:

5-01-03

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Atty.  
Dkt. No.

M#

Client Ref.

283002

**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Applicant: FARBER et al.

Appln. No.: Cont. of 09/283,160

Filing Date: November 15, 2001

Date: November 15, 2001

Page

6

of

7

Examiner: Jean Homere

Group Art Unit: 2177

**U.S. PATENT DOCUMENTS**

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
JRH	AR 4,887,235	12/1989	HOLLOWAY			
	<del>BR 4,888,681</del>	<del>12/1989</del>	<del>BARNES</del>			
	CR 4,490,782	12/1984	DIXON			
	DR 4,972,367	11/1990	BURKE			
	ER 4,922,414	05/1990	HOLLOWAY			
	FR 5,057,837	10/1991	COLWELL			
	GR 5,007,658	12/1991	BENDERT			
	HR 5,025,421	06/1991	CHO			
	IR 5,129,081	07/1992	KOBAYASHI			
	JR 5,129,082	07/1992	TIRFING			
	KR 5,144,667	09/1992	POGUE, JR.			
	LR 5,179,680	01/1993	COLWELL			
	MR 5,301,286	04/1994	RAJANI			
	NR 5,404,508	04/1995	KONRAD			

**FOREIGN PATENT DOCUMENTS**

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClass	Abstract		Readily Available	
								Enclosed	No	Enclose	No
	OR										
	PR										
	QR										
	RR										

**OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

JRH	SR	Zhiyu Tian et al., A New Hashing Function: Statistical Behaviour and Algorithm, pp. 3-13				
	TR	G. L. Friedman, Digital Camera with Apparatu for Authentication of Images Produced from an Image File, NASA CASE NO. NPO-19108-1-CU, Serial No. 08/159,980, November 24, 1993				
	UR	H. Goodman, Ada, Object-Oriented Techniques, and Concurrency in Teaching Data Structures and File Management REPORT DOCUMENTATION PAGE AD-A275 385 - 94-04277				
	VR	Advances in Cryptology-EUROCRYPT'93, Workshop on the Theory and Application of Cryptographic Techniques Lofthus, Norway, May 23-27, 1993 Proceedings				
	WR	Proceedings of the 1993 ACM SIGMOD International Conference on Management of Data, Vol. 22, Issue 2, June 1993				
	XR	Advances in Cryptology-AUSCRYPT '92 - Workshop on the Theory and Application of Cryptographic Techniques Gold Coast, Queensland, Australia, December 13-16, 1992 Proceedings				

Examiner Jean R Homere

Date Considered: 5-01-03

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Atty.  
Dkt. No.

M#

Client Ref.

283002

Applicant: FARBER et al.

Appl. No.: Cont. of 09/283,160

Filing Date: November 15, 2001

Examiner: Jean Homere

Group Art Unit: 2177

**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Date: November 15, 2001

Page

7

of

7

**U.S. PATENT DOCUMENTS**

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	AR					
	BR					
	CR					
	DR					
	ER					
	FR					
	GR					
	HR					
	IR					
	JR					
	KR					

**FOREIGN PATENT DOCUMENTS**

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
	LR							
	MR							
	NR							
	OR							
	PR							
	QR							
	RR							
	SR							
	TR							
	UR							

**OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

VR	KIM et al., "Experiences with Tripwire: Using Integrity Checkers For Intrusion Detection", COAST Labs. Dept. of Computer Sciences Purdue University, February 22, 1995, pages 1-12			
WR	KIM et al., "The Design and Implementation of Tripwire: A file System Integrity Checker", COAST Labs. Dept. of Computer Sciences Purdue University, November 19, 1993, pages 1-21			

Examiner Jean R Homere

Date Considered: 5-01-03

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC**





PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	2	of	10
-------	---	----	----

**Complete if Known**

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

## U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A13	5,384,565		CANNON	1/1995	<div>RECEIVED</div> <div>JUL 30 2003</div> <div>Technology Center 2100</div>
	A14	5,357,623		MEGORY-COHEN	10/1994	
	A15	3,668,647		EVANGELISTI	6/1992	
	A16	4,215,402		MITCHELL	7/1980	
	A17	4,290,105		CICHELLI	9/1981	
	A18	4,376,299		RIVEST	3/1983	
	A19	4,405,829		RIVEST	9/1983	
	A20	4,412,285		NECHES	10/1983	
	A21	4,414,624		SUMMER, JR.	11/1983	
	A22	4,441,155		FLETCHER	4/1984	
	A23	4,464,713		BENHASE	8/1984	

## FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner  
Signature**

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

*(use as many sheets as necessary)*

Sheet	3	of	10
-------	---	----	----

**Complete if Known**

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

## U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A24	4,577,293		MATICK	3/1986	<div>RECEIVED</div> <div>JUL 30 2003</div> <div>Technology Center 210</div>
	A25	4,642,793		MEADEN	2/1987	
	A26	4,691,299		RIVEST	9/1987	
	A27	4,725,945		KRONSTADT	2/1988	
	A28	4,773,039		ZAMORA	9/1988	
	A29	4,887,235		HOLLOWAY	12/1989	
	A30	4,490,782		DIXON	12/1984	
	A31	4,922,414		HOLLOWAY	5/1990	
	A32	5,057,837		COLWELL	1/1991	
	A33	5,007,658		BENDERT	12/1991	
	A34	5,025,421		CHO	6/1991	

## FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner  
Signature**

Date  
Considered

**\*EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC

+

+

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**Complete if Known**

*(use as many sheets as necessary)*

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

U.S. PATENT DOCUMENTS						
Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A35	5,129,081		KOBAYASHI	7/1992	
	A36	5,129,082		TIRFING	7/1992	
	A37	5,144,867		POGUE, JR.	9/1992	
	A38	5,179,680		COLWELL	1/1993	
	A39	5,301,286		RAJANI	4/1994	
	A40	5,404,508		KONRAD	4/1995	
	A41	5,638,443		STEFIK et al.	6/1997	
	A42	5,802,291		BALICK et al.	9/1998	
	A43	5,542,087		NEIMAT et al.	7/1996	
	A44	5,287,499		NEMES	2/1994	
	A45	4,922,417		CHURM et al.	5/1990	

[illegible]Date  
Considered

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC



Please type a plus sign (+) inside this box → ☐



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no person shall be required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 6 of 10

### Complete if Known

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

RECEIVED

JUL 30 2003

Technology Center 2100

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	A54	BERT DEM BOER et al., Collisions for the compression function of MD <sub>5</sub> , pp. 292-304	
	A55	SAKTI PRAMANIK et al., Multi-Directory Hashing, 1993, Info. Sys., Vol. 18, No. 1, pp. 63-74	
	A56	MURLIDHAR KOUSHIK, Dynamic Hashing with Distributed Overflow Space: A File Organization with Good Insertion Performance, 1993, Info. Sys., Vol. 18, No. 5, pp. 299-317	
	A57	WITOLD LITWIN et al., LH*-Linear Hashing for Distributed Files, HP Labs Tech. Report No. HPL-93-21, June 1993, pp. 1-22	
	A58	YULIANG ZHENG et al., HAVAL-A One-Way Hashing Algorithm with Variable Length of Output (Extended Abstract), 1993, pp. 83-105	
	A59	CHRIS CHARNES and JOSEF PIEPRZKY, Linear Nonequivalence versus Nonlinearity, Pieprzky, 1993, pp. 156-164	
	A60	WITOLD LITWIN et al., Linear Hashing for Distributed Files, ACM SIGMOD, May 1993, pp. 327-336	
	A61	MING-LING LO et al., On Optimal Processor Allocation to Support Pipelined Hash Joins, ACM SIGMOD, pp. 69-78, May 1993	
	A62	THOMAS A. BERSON, Differential Cryptanalysis Mod 2 <sup>32</sup> with Applications to MD <sub>5</sub> , pp. 69-81	
	A63	WILLIAM PERRIZO et al., Distributed Join Processing Performance Evaluation, Twenty-Seventh Hawaii International Conference on System Sciences, Vol. II, pp. 236-244	

Examiner  
Signature

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 7 of 10

### Complete if Known

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

RECEIVED

JUL 30 2003

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Technology Center 2100

Examiner Initials *	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	A64	VIJAY KUMAR, A Concurrency Control Mechanism Based on Extendible Hashing for Main Memory Database Systems, ACM, Vol. 3, 1989, pp. 109-113	
	A65	BIRGIT PFITZMAN, Sorting Out Signature Schemes, November 1993, 1 <sup>st</sup> Conf. Computer & Comm. Security '93, p. 74-85	
	A66	ZHIYU TIAN et al., A New Hashing Function: Statistical Behaviour and Algorithm, Spring 1993, pp. 3-13	
	A67	G.L. FRIEDMAN, Digital Camera with Apparatus for Authentication of Images Produced from an Image File, NASA CASE NO. NPO-19108-1-CU, Serial No. 08/159,980, November 24, 1993	
	A68	H. GOODMAN, ADA, Object-Oriented Techniques, and Concurrency in Teaching Data Structures and File Management REPORT DOCUMENTATION PAGE AD-A275 385 - 94-04277	
	A69	Advances in Cryptology-EUROCRYPT '93, Workshop on the Theory and Application of Cryptographic Techniques Lofthus, Norway, May 23-27, 1993, Proceedings	
	A70	Proceedings on the 1993 ACM SIGMOD International Conference on Management of Data, Vol. 22, Issue 2, June 1993	
	A71	Advances of Cryptology-AUSCRYPT '92 - Workshop on the Theory and Application of Cryptographic Techniques Gold Coast, Queensland, Australia, December 13-16, 1992 Proceedings	
	A72	GWERTZMAN, JAMES et al., "The Case for Geographical Push-Caching." Technical Report HU TR 34-94 (excerpt), Harvard University, DAS, Cambridge, MA 02138, 1994, 2 pgs.	
	A73	GRIGNI, MICHELANGELO, et al., "Tight Bounds on Minimum Broadcasts Networks", SIAM Journal of Discrete Mathematics, Vol. 4, No. 2, May 1991, pgs. 207-222	

Examiner  
Signature

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 8 of 10

### Complete if Known

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

RECEIVED

JUL 30 2003

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Technology Center 2100

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	A74	DEVINE, ROBERT, "Design and Implementation of DDH: A Distributed Dynamic Hashing Algorithm", In Proceedings of 4th International Conference on Foundations of Data Organizations and Algorithms, 1993, pp. 101-114	
	A75	DEERING, STEPHEN et al., "Multicast Routing in Datagram Internet Works and Extended LANs," ACM Transactions on Computer Systems, Vol. 8, No. 2, May 1990, pp. 85-110	
	A76	CORMEN, THOMAS H., et al., "Introduction to Algorithms, The MIT Press, Cambridge, Massachusetts, 1994, pp. 219-243, 991-993	
	A77	NAOR, MONI et al., "The Load, Capacity and Availability of Quorum Systems", In Proceedings of the 35th IEEE Symposium on Foundations of Computer Science, November 1994, pp. 214-225	
	A78	NISAN, NOAM, "Pseudorandom Generators for Space-Bounded Computation", In Proceedings of the Twenty-Second Annual ACM Symposium on Theory of Computing, May 1990, pp. 204-212	
	A79	PALMER, MARK et al., "Fido: A Cache that Learns to Fetch", In Proceedings of the 17th International Conference on Very Large Data Bases, September 1991, pp. 255-264	
	A80	PELEG, DAVID et al., "The Availability of Quorum Systems", Information and Computation 123, 1995, 210-223	
	A81	RABIN, MICHAEL, "Efficient Dispersal of Information for Security, Load Balancing, and Fault Tolerance", Journal of the ACM, Vol. 36, No. 2, April 1989, pp. 335-348	
	A82	RAVI, R., "Rapid Rumor Ramification: Approximating the Minimum Broadcast Time", In Proceedings of the 35th IEEE Symposium on Foundation of Computer Science, November 1994, pp. 202-213	
	A83	SCHMIDT, JEANETTE, et al., "Chernoff-Hoeffding Bounds for Applications with Limited Independence", In Proceedings of the 4th ACS-SIAM Symposium on Discrete Algorithms, 1993, p. 331-340	

Examiner  
Signature

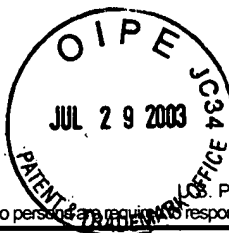
Date  
Considered

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 9 of 10

### Complete if Known

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

RECEIVED

JUL 30 2003

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Technology Center 2100

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	A84	TARJAN, ROBERT ENDRE, et al., "Storing a Sparse Table", Communications of the ACM, Vol. 22, No. 11, November 1979, pp. 606-611	
	A85	WEGMAN, MARK et al., "New Hash Functions and Their Use in Authentication and Set Equality", Journal of Computer and System Sciences, Vol. 22, June 1981, pp. 265-279	
	A86	VITTER, JEFFREY SCOTT et al., "Optimal Prefetching via Data Compression", In Proceedings of 32nd IEEE Symposium on Foundations of Computer Science, November 1991, p. 124-130	
	A87	FRIEDMAN, MICHAEL et al., "Storing a Sparse Table with O(1) Worst Case Access Time", Journal of the Association for Computing Machinery, Vol. 31, No. 3, July 1984, pp. 538-544	
	A88	YAO, ANDREW CHI-CHIH, "Should Tables be Sorted?", Journal of the Association for Computing Machinery, Vol. 28, No. 3, July 1981, pp. 615-628	
	A89	FLOYD, SALLY et al., "A Reliable Multicast Framework for Light-Weight Sessions and Application Level Framing", In Proceeding of ACM SIGCOMM '95, pp. 342-356	
	A90	FEELEY, MICHAEL, et al., "Implementing Global Memory Management in a Workstation Cluster", In Proceedings of the 15th ACM Symposium on Operating Systems Principles, 1995, pp. 201-212	
	A91	CARTER, J. LAWRENCE, et al., "Universal Classes of Hash Functions", Journal of Computer and System Sciences, Vol. 18, No. 2, April 1979, pp. 143-154	
	A92	PATENT ABSTRACTS OF JAPAN, "Electronic Mail Multiplexing System and Communication Control Method in The System", 06/30/1993, JP 05162529	
	A93	KIM et al., "Experiences with Tripwire: Using Integrity Checkers For Intrusion Detection", COAST Labs. Dept. of Computer Sciences Purdue University, February 22, 1995, pp. 1-12	

Examiner Signature	Date Considered
-----------------------	--------------------


\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



+



+

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

**Complete if Known**

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

Sheet	10	Of	10
-------	----	----	----

[illegible]

RECEIVED

JUL 30 2003

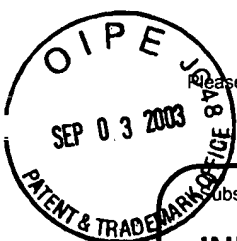
Technology Center 2100

Date  
Considered

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

+



Please type a plus sign (+) inside this box → ☐

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

### Complete if Known

Application Number	09/987,723
Filing Date	November 15, 2001
First Named Inventor	David A. FARBER et al.
Group Art Unit	2177
Examiner Name	Unassigned
Attorney Docket Number	39685-0036

### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
JRH	B01	PETER DEUTSCH (peterd@bunyip.com), "Re: MD5 and LIFNs (was: Misc Comments)", www.acl.lanl.gov/URI/archive/uri-94q2.messages/0106.html, April 26, 1994	
	B02	ALEXANDER DUPUY (dupuy@smarts.com), "RE: MD5 and LIFNs (was: Misc Comments)", www.acl.lanl.gov/URI/archive/uri-94q2.messages/0113.html, April 26, 1994	
	B03	ALEXANDER DUPUY (dupuy@smarts.com), "MD5 and LIFNs (was: Misc Comments)", www.acl.lanl.gov/URI/archive/uri-94q2.messages/0081.html, April 17, 1994	
	B04	ALBERT LANGER (cmf851@anu.oz.au), http://groups.google.com/groups?selm=1991Aug7.225159.786%40newshost.anu.edu.au&oe=UTF-8&output=gplain, August 7, 1991	
	B05	CLIFFORD LYNCH (Calur@uccmvsa.bitnet), "ietf url/uri overview draft paper (long)", www.acl.lanl.gov/URI/archive/uri-93q1.messages/0015.html, March 25, 1993	
	B06	K. SOLLINS and L. MASINTER, "Functional Requirements for Uniform Resource Names", www.w3.org/Addressing/rfc1737.txt, December 1994, pp. 1-7	
	B07	W3C:ID, HTTP: A protocol for networked information, "Basic HTTP as defined in 1992", www.w3.org/Protocols/HTTP2.html, 1992	

RECEIVED

SEP 04 2003

Technology Center 2100

Examiner Signature	Jean R. Homere	Date Considered	11-20-03
--------------------	----------------	-----------------	----------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.